

REMARKS

This application has been reviewed in light of the Office Action dated January 21, 2004. Claims 1-57 are presented for examination, of which Claims 1, 23, and 45, the independent claims, have been amended to define still more clearly what Applicant regards as his invention. Claims 2-22, 24-44, and 46-57 have been amended as to matters of form. Favorable reconsideration is requested.

Applicant notes with appreciation the indication that Claims 7-22, 29-44, and 48-56 would be allowable if rewritten so as not to depend from a rejected claim, and with no change in scope. These claims have not been so rewritten because, for the reasons given below, their base claims are believed to be allowable.

The Examiner objected to the drawings on the grounds noted on page 2 of the Office Action.

Applicant has amended Figure 13 to incorporate the Examiner's suggestion. It is believed that the objection to the drawings has been remedied, and its withdrawal is therefore respectfully requested.

Claims 1-6, 23-28, 45, and 46 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,802,361 (*Wang '361*), in view of U.S. Patent No. 5,805,733 (*Wang '733*), Claim 47 was rejected under Section 103(a) as being unpatentable over *Wang '361* in view of *Wang '733* and further in view of European Patent EP 0 834 858 A2 (*Hirayama*), and Claim 57 was rejected under Section 103(a) as being unpatentable over *Wang '361* in view of *Wang '733* and further in view of U.S. Patent No. 5,166,723 (*Yoshida*).

As shown above, Applicant has amended independent Claims 1, 23, and 45 in terms that more clearly define what he regards as his invention, although these

amendments are not intended to narrow the scope of the claims as originally filed.

Applicant submits that these amended independent claims, together with the remaining claims dependent thereon, are patentably distinct from the cited prior art for at least the following reasons.

The aspect of the present invention set forth in Claim 1 is an image processing apparatus. The apparatus includes labeling means, sequential label set generation means, sequential label set accumulation means, similarity computation means, scene change detection means, and scene change storage means. The labeling means extracts frame image data from moving image data, segments the frame image data into blocks, and respectively assigns, to the blocks, labels in accordance with feature amounts obtained in units of the blocks. The sequential label set generation means generates a sequential label set by arranging the labels assigned by the labeling means in a predetermined block order. The sequential label set accumulation means accumulates the sequential label set generated by the sequential label set generation means in connection with the frame image data. The similarity computation means computes similarities between the generated sequential label set and sequential label sets of a previous frame image data group. The scene change detection means detects a scene change frame in the moving image based on the similarities computed by the similarity computation means, and the scene change storage means stores information of the detected scene change frame in connection with the frame image data.

Among other important features of Claim 1 are assigning to each block labels in accordance with feature amounts, generating a sequential label set by arranging the assigned labels in a predetermined order of the blocks, and computing similarities between the generated sequential label set and the sequential label sets of a previous frame

image data group. That is, characteristic scene change detection may be implemented in which the appearance of a frame having absolutely no continuity is removed while absorbing some continuous change in the moving image.

Wang '361 relates to methods for searching images having particular attributes and classifying the images according to their attributes. *Wang '361* discusses segmenting each image into blocks (column 10, lines 23-25). However, as described at column 10, lines 26-33, the segmenting of each frame into blocks is for detecting a motion vector, and not for detecting a scene change. Further, *Wang '361*, at column 11, lines 23-24, discusses a summary file identifying representative images from each scene in a video sequence which the Examiner appears to equate to the labels of Claim 1. However, the summary files in *Wang '361* are assigned to an image or a frame, whereas the label in Claim 1 is assigned to one of the blocks of a frame.

Further, *Wang '361* discusses a scene change detector 127, in column 8, lines 31-35. The scene change detector 127 of *Wang '361* determines the location (time code offset or other similar index) of distinct scenes in the video sequence. Accordingly, the scene change detection is implemented using a time code offset or other similar index.

Furthermore, as correctly stated by the Examiner, *Wang '361* fails to disclose generating a sequential label set by arranging the labels in a predetermined block order.

Still further, Applicant has found nothing in *Wang '361* that would teach or suggest assigning to each block labels in accordance with feature amounts, generating a sequential label set by arranging the assigned labels in a predetermined order of the blocks, and computing similarities between the generated sequential label set and the sequential label sets of a previous frame image data group, as recited in Claim 1.

For at least the above reasons, Applicant submits that Claim 1 is clearly patentable over *Wang* '361, taken alone.

The Office Action cites *Wang* '733 as remedying the deficiency of generating a sequential label set by arranging the labels in a predetermined block order, as recited in Claim 1. *Wang* '733 relates to methods and systems for reviewing and analyzing video data. In the *Wang* '733 system, frames are arranged in units of frames. Whereas, the apparatus of Claim 1 arranges labels assigned to the blocks in a frame in units of the blocks. That is, the image processing apparatus of Claim 1 generates a sequential label set by arranging the labels assigned to the blocks in a predetermined block order. Accordingly, nothing has been found in *Wang* '733 that would teach or suggest assigning to each block labels in accordance with feature amounts, generating a sequential label set by arranging the assigned labels in a predetermined order of the blocks, and computing similarities between the generated sequential label set and the sequential label sets of a previous frame image data group, as recited in Claim 1.

Applicant submits that the proposed combination of *Wang* '361 and *Wang* '733, assuming such combination would even be permissible, would fail to teach or suggest assigning to each block labels in accordance with feature amounts, generating a sequential label set by arranging the assigned labels in a predetermined order of the blocks, and computing similarities between the generated sequential label set and the sequential label sets of a previous frame image data group, as recited in Claim 1.

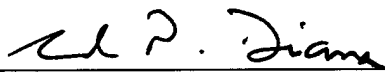
Independent Claims 23 and 45 are method and storage medium claims, respectively, corresponding to apparatus Claim 1, and are believed to be patentable for at least the same reasons as discussed above in connection with Claim 1.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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